PROGNOSTIC DISCUSSION FOR LONG-LEAD OUTLOOKS
CLIMATE PREDICTION CENTER NCEP
NATIONAL WEATHER SERVICE WASHINGTON DC
3 PM EDT THURSDAY OCTOBER 14 1999

PROGNOSTIC DISCUSSION OF SST FORECASTS

CURRENT CONDITIONS IN THE EAST-CENTRAL EQUATORIAL PACIFIC (120-170W LONGITUDE AND 5S TO 5N - ALSO CALLED NINO 3.4) INDICATE THAT A WEAK TO MODERATE COLD ENSO EVENT IS CONTINUING. SSTS IN THE NINO 3.4 AREA ARE CURRENTLY AROUND 1 DEGREE C BELOW NORMAL. NEGATIVE ANOMALIES OF AT LEAST 1 DEGREE C EXTEND FROM THE COAST OF SOUTH AMERICA WESTWARD TO ABOUT 150W - WITH A FEW SMALL POCKETS OF 2 DEGREE C ON THE IMMEDIATE EQUATOR BETWEEN 80W AND 140W. ANOMALIES OF -0.5 DEGREES EXTEND TO ABOUT 165E. THE TRADE WINDS CONTINUE TO BE ABOVE AVERAGE - ESPECIALLY NEAR THE DATELINE. THERE IS STILL A SUBSTANTIAL AMOUNT OF COLD SUB-SURFACE WATER BETWEEN THE DATELINE AND 90W TO MAINTAIN LA NINA CONDITIONS AT LEAST THROUGH EARLY WINTER AND LIKELY THROUGH EARLY SPRING OF 2000.

THE ATMOSPHERIC PORTION OF THE NCEP COUPLED MODEL WAS NOT AVAILABLE FOR THIS FORECAST DUE TO THE LOSS OF THE CRAY C90 LAST MONTH - THE SST FORECAST WAS AVAILABLE - THE CCA FORECAST CREATED LAST MONTH IS USED FOR THIS MONTHS FORECAST. THE CCA AND THE CONSTRUCTED ANALOG PREDICT THAT SSTS IN THE NINO 3.4 REGION WILL REMAIN BELOW NORMAL THROUGH APPROXIMATELY APRIL OR MAY OF 2000. THE COUPLED MODEL SST FORECAST IS THE WARMEST TOOL THROUGH EARLY 2000 - FORECASTING AN ANOMALY CLOSE TO -.5 CELSIUS DEGREES IN NDJ AND STRENGTHENING ONLY SLIGHTLY BY DJF. THE CCA PREDICTS THE SST ANOMALY TO BE AROUND -1.3 CELSIUS DEGREES IN NDJ AND THE CONSTRUCTED ANALOG FORECASTS NINO 3.4 SST TO BE ABOUT 1.7 DEGREES BELOW NORMAL FOR THE SAME PERIOD. ALL MODELS FORECAST A RAPID WEAKENING OF THE NEGATIVE ANOMALIES BETWEEN LATE WINTER AND SPRING OF 2000. A CONSOLIDATED FORECAST BASED ON THE PAST PERFORMANCE OF ALL THREE MODELS PREDICTS SSTS OF 1.2 DEGREES BELOW NORMAL FOR NDJ AND THEN WARMING TO ZERO ANOMALY BY AMJ 2000. THE FORECAST BEYOND AMJ IS HIGHLY UNCERTAIN WITH THE CCA - COUPLED MODEL AND CONSOLIDATION FORECAST INDICATING SOMEWHAT ABOVE NORMAL SSTS DEVELOPING IN THE NINO 3.4 REGION BY LATE SUMMER OF 2000 - WHILE THE CONSTRUCTED ANALOG PREDICTS TEMPERATURES AROUND AVERAGE. LAST MONTHS COUPLED MODEL RUN ENDS IN JJA WITH THE SST ANOMALY NEAR ZERO. THE CURRENTLY OBSERVED ENSO STATE IS VERY LIKELY TO STRENGTHEN THROUGH THE FALL AND PERSIST THROUGH THE END OF THE CALENDAR YEAR AND INTO THE FOLLOWING SPRING. THEREFORE - WE ARE RELATIVELY CONFIDENT THAT THE CURRENT COLD ENSO SITUATION WILL NOT CHANGE APPRECIABLY BEFORE EARLY SPRING 2000.

PROGNOSTIC DISCUSSION OF OUTLOOKS - NDJ 1999-2000 TO NDJ 2000-2001

THE FORECAST FROM NDJ 1999 THROUGH MAM 2000 ARE BASED LARGELY ON THE HISTORICAL DISTRIBUTIONS OF U.S. T AND P ASSOCIATED WITH MODERATE TO STRONG LA NINA CONDITIONS. THE NCEP COUPLED MODEL FORECAST WAS NOT AVAILABLE. CCA AND OCN WERE CONSULTED FOR ALL LEADS. FORECASTS WERE ADJUSTED TO ACCOUNT FOR TEMPERATURE AND PRECIPITATION TRENDS AS INDICATED BY OCN - AND ALSO AS INDICATED FROM A 30-YEAR LINEAR FIT. FORECASTS FOR AMJ 2000 AND BEYOND ARE BASED MAINLY ON OCN IN THE LOWER 48 STATES AND ON CCA IN ALASKA. THE SOIL MOISTURE TOOLS (SMT AND CAS) ARE NOT USED IN THIS SET OF FORECASTS BECAUSE THIS FACTOR IS ONLY IMPORTANT DURING THE HIGH SUN TIME OF YEAR.

THIS MONTHS SET OF FORECAST MAPS - THROUGH OND 1999 - ARE UNCHANGED FROM THOSE MADE LAST MONTH.

THE TEMPERATURE FORECASTS FOR NDJ THROUGH WINTER REFLECT THE CONTINUATION OF BELOW NORMAL SST ALONG THE CALIFORNIA COAST - PARTICULARLY IN THE SOUTHERN HALF OF THE STATE WHERE SSTS HAVE NOT MODERATED FROM THEIR PREVIOUSLY COLD READINGS AS MUCH AS THEY HAVE FROM SAN FRANCISCO TO THE CANADIAN BORDER. CONTINUATION OF LA NINA CONDITIONS MAKES RESTORATION OF NORMAL SSTS ALONG THE WEST COAST SLIGHTLY LESS LIKELY THAN WOULD OTHERWISE BE THE CASE. SSTS ARE COOLER THAN NORMAL IN MUCH OF THE EXTRATROPICAL AS WELL AS THE TROPICAL EASTERN

PACIFIC - AND THIS MAY TEND TO KEEP CALIFORNIA SST ON THE COOL SIDE DURING THE COMING 5 MONTHS.

ABOVE NORMAL TEMPERATURES PREDICTED IN THE INTERIOR SOUTHWEST FOR ALL LEADS AND IN FLORIDA FOR MANY OF THEM ARE FROM OCN AND THE 30-YEAR LINEAR TREND FIT. DURING WINTER 1999-2000 THE LA NINA CONTRIBUTES TO THESE AS WELL.

THE TEMPERATURE FORECAST FOR NDJ THROUGH FMA REFLECTS THE COLD SEASON PATTERNS ASSOCIATED WITH MODERATE-TO-STRONG COLD EVENTS. THE OVERALL PATTERN INCLUDES ABOVE AVERAGE TEMPERATURES IN THE SOUTHERN TIER OF STATES - AND NEAR TO BELOW NORMAL TEMPERATURES IN SOME OF THE NORTHERN STATES. THE NEAR NORMAL CATEGORY IS FORECAST WHERE THE LA NINA CALLS FOR BELOW NORMAL TEMPERATURES BUT THE TREND INDICATES ABOVE NORMAL TEMPERATURES. RATHER THAN RESULTING IN CLIMATOLOGICAL PROBABILITIES - THIS CONDITION REDUCES THE CHANCE OF LOWEST TERCILE OR HIGHEST TERCILE MEAN TEMPERATURE AND THEREBY INCREASES THE CHANCE OF THE NEAR NORMAL CATEGORY.

THE FORECASTS FOR DJF AND JFM MOST STRONGLY REFLECT THE U.S. WINTERTIME T AND P PATTERNS ASSOCIATED WITH LA NINA BECAUSE THAT IS WHEN ENSO IMPACTS ARE THE MOST PRONOUNCED. THE FACT THAT THIS IS WILL BE THE SECOND LA NINA WINTER IN A ROW MAY CAUSE THE IMPACTS TO APPEAR WITH GREATER CERTAINTY AS RESIDUAL EFFECTS OF THE 1997-98 EL NINO HAVE NOW COMPLETELY DISSIPATED. THE SUBTROPICAL JET IN THE EASTERN PACIFIC IS GENERALLY WEAKER THAN NORMAL DURING A LA NINA WINTER AND PERSISTENT UPPER LEVEL RIDGES OVER THE NORTHERN PACIFIC OCEAN TEND TO BE MORE COMMON THAN NORMAL. THE PLACEMENT AND DURATION OF THESE BLOCKING RIDGES IS HIGHLY VARIABLE AND CAN PRODUCE LARGE SWINGS IN TEMPERATURE CONDITIONS OVER THE U.S. WHEN AVERAGED OVER AN ENTIRE SEASON - THE LA NINA COMPOSITE ANALYSIS SHOWS THAT TEMPERATURES TEND TO BE BELOW THE SHORT TERM MEAN (E.G. THE LAST 10 YEARS) ALONG THE WEST COAST - THE PACIFIC NORTHWEST - AND INTO THE NORTHERN GREAT PLAINS DURING THE WINTER. THIS PATTERN IS MOST STRONGLY INDICATED ON THIS FORECAST BY LAST MONTHS CMP AND CCA TOOLS.

TRENDS HAVE SIGNIFICANTLY INFLUENCED THE SHORT TERM (E.G. 10-YEAR) WINTERTIME MEAN IN FAVOR OF WARMER TEMPERATURES OVER MOST OF THE U.S. THIS SIGNIFICANTLY INFLUENCES THE ENSO SIGNAL - ESPECIALLY IN THE AREAS FOR WHICH LA NINA HAS HISTORICALLY BEEN ASSOCIATED WITH BELOW NORMAL TEMPERATURES. TRENDS ARE MORE PRONOUNCED IN RELATION TO THE INTERANNUAL VARIABILITY IN THE PACIFIC NORTHWEST THAN IN INTERIOR LOCATIONS. THE COMBINED SIGNALS THERE DURING JFM - COLD DUE TO ENSO AND WARM DUE TO TRENDS - PRODUCES AN ENHANCED PROBABILITY OF BOTH THE NEAR NORMAL AND BELOW NORMAL CATEGORIES. THE BELOW NORMAL CATEGORY IS THE BEST BET FOR THE SOUTHERN HALF OF ALASKA AND THE ALASKAN PANHANDLE EXTENDING INTO THE NORTHWEST CORNER OF WASHINGTON STATE - WHERE THE ENSO SIGNAL IS STRONGEST. NEAR NORMAL CONDITIONS ARE THE BETTER CHOICE FOR MOST OF THE PACIFIC NORTHWEST DURING JFM.

IN THE NORTHERN GREAT PLAINS -THESE SAME CONFLICTING SIGNALS - COLD FROM ENSO AND WARM FROM TRENDS - REDUCE THE ODDS OF THE BELOW NORMAL CATEGORY TO HARDLY MORE THAN CLIMATOLOGY. BUT THE LARGE INTERANNUAL VARIABILITY IN THE PLAINS - ESPECIALLY IN LA NINA YEARS - MAKE THE NEAR NORMAL CATEGORY A LESS IDEAL CHOICE TO REPRESENT THE MEAN CONDITIONS. HOWEVER - NEAR NORMAL IS STILL INDICATED AS THE MOST LIKELY RESULT IN FMA AND - IN EASTERN MONTANA - IN JFM AS WELL.

TEMPERATURE ANOMALIES FOR MAM 2000 ARE MOSTLY TREND-RELATED AND SHOW ONLY A SLIGHT ENSO INFLUENCE - SINCE EQUATORIAL PACIFIC SSTS ARE EXPECTED TO RETURN TO NEAR NORMAL BY APRIL OR MAY. ENSO COMPOSITES - TRENDS - CCA SUPPORT BELOW NORMAL TEMPERATURES NEAR THE GREAT LAKES AND ABOVE NORMAL IN THE SOUTHWEST. FORECASTS FOR AMJ 2000 AND BEYOND REFLECT THE MAINLY THE RECENT TEMPERATURE TRENDS FROM OCN IN THE MAINLAND U.S. AND THE CCA FORECAST IN ALASKA.

FROM NDJ THROUGH FMA THE TYPICAL LA NINA PRECIPITATION PATTERN IS FORECAST - INCLUDING BELOW MEDIAN PRECIPITATION OVER THE SOUTHERN U.S. AND ABOVE MEDIAN PRECIPITATION ALONG THE NORTHERN BORDER FROM THE PACIFIC COAST TO THE GREAT

LAKES. LA NINA PRECIPITATION IS USUALLY ABOVE MEDIAN IN MUCH OF THE OHIO AND TENNESSEE VALLEYS AS WELL - PARTICULARLY IN JFM. THE PATTERN OF DRYNESS IN THE SOUTHERN TIER HAS TWO FOCAL POINTS - ONE IN THE INTERIOR SOUTHWEST AND ONE IN THE SOUTHEAST - WITH A WEAKNESS IN THE LOWER MISSISSIPPI VALLEY. BELOW MEDIAN PRECIPITATION FOR ALASKA THROUGH SPRING 2000 IS INDICATED BY CCA. ADDITIONALLY WE NOTE THAT WITH LAST WINTER'S LA NINA THERE WERE DRY CONDITIONS IN ALASKA. THE PROBABILITY MAGNITUDE OF THE FORECASTS FOR BELOW MEDIAN PRECIPITATION IS REDUCED FROM WHAT THE ENSO COMPOSITES INDICATE THROUGHOUT IN THE CENTRAL AND SOUTHWEST U.S. DUE TO POSITIVE PRECIPITATION TRENDS OVER THOSE REGIONS.

FROM AMJ 2000 ONWARD FORECASTS ARE DETERMINED MAINLY ON THE BASIS OF TRENDS. THESE MAY BE EXPRESSED BY THE OCN - THE 30-YEAR LINEAR TREND FIT - AND OCCASIONALLY THE CCA.

FOR A DESCRIPTION OF THE STANDARD FORECAST TOOLS - THEIR SKILL -AND THE FORECAST FORMAT PLEASE SEE OUR WEB PAGE
AT:HTTP://WWW.CPC.NCEP.NOAA.GOV/PRODUCTS/PREDICTIONS/
MULTI-SEASON/13_SEASONAL_OUTLOOKS/TOOLS

NOTE - THESE CLIMATE OUTLOOKS ARE INTENDED FOR USE PRIOR TO THE START OF THEIR VALID PERIODS. WITHIN ANY GIVEN VALID PERIOD OBSERVATIONS AND SHORT AND MEDIUM RANGE FORECASTS SHOULD BE CONSULTED. ALSO - THIS SET OF OUTLOOKS WILL BE SUPERSEDED BY THE ISSUANCE OF THE NEW SET NEXT MONTH ON THURSDAY NOV 18 1999.

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